

549, 381

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
21 October 2004 (21.10.2004)

PCT

(10) International Publication Number  
**WO 2004/090018 A1**

- (51) International Patent Classification<sup>7</sup>: **C08G 75/02**, C08L 65/00, 81/00, C08J 3/24, 9/26
- (21) International Application Number: PCT/US2004/009972
- (22) International Filing Date: 1 April 2004 (01.04.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/459,732 2 April 2003 (02.04.2003) US
- (71) Applicant (for all designated States except US): **DOW GLOBAL TECHNOLOGIES INC.** [US/US]; Washington Street, 1790 Building, Midland, MI 48674 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **HAHNFELD, Jerry, L.** [US/US]; 920 Scenic Drive, Midland, MI 48642 (US). **HEFNER, Robert, E., Jr.** [US/US]; 109 Wedgewood, Lake Jackson, TX 77566 (US). **LI, Yongfu** [US/US]; 206 Wanetah Drive, Midland, MI 48640 (US). **NIU, Q., Jason** [US/US]; 305 West Chapel Lane, Midland, MI 48640 (US).
- (74) Agent: **DELINE, Douglas, N.**; The Dow Chemical Company, Intellectual Property Section, P.O. Box 1967, Midland, MI 48674-1967 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:  
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: MULTIFUNCTIONAL SUBSTITUTED MONOMERS AND POLYARYLENE COMPOSITIONS THEREFROM

(57) Abstract: A compound useful in the formation of polymeric dielectric films for semiconductor devices and the resulting cured films and devices, said compound comprising i) three or more dienophile groups (A-functional groups) and ii) a single ring structure comprising two conjugated carbon-to-carbon double bonds and a leaving group L (collectively referred to as a B-functional group), characterized in that one A-functional group of one molecule of the compound is capable of reaction under cycloaddition reaction conditions with the B-functional group of a second molecule and elimination of the leaving group L, to thereby form a polymer.

WO 2004/090018 A1